heilkunde, 1914, vol. xcv.) to a searching examination for the detection of pathological evidences there were found peculiar and uniformly characterized islands of cartilage in the labyrinth capsule; they were visible to the naked eye, of a rounded or irregular contour, and were situated, with a fair degree of symmetry, between the oval window and the middle whorl of the cochlea, and consisted of hyaline multicellular cartilage with occasional fine traversant fibres. The main body of the cartilaginous structure containing fine cretaceous dust and occasionally cretaceous masses. In juxtaposition to these islands, but without genetric relationship, were small areas of new bone with medullary cavities, in the neighborhood of these areas there was, as a rule, atrophy of the membranous labyrinth. As these deviations from from the normal were found at all ages, from infancy upward, the author is led to regard the condition as a congenital arrest of development with an interesting analogy to the changes in the cases of ostitis chronica metaplastica, namely, origin in the labryinth capsule, with the same local predilection, the same binaural symmetry, the presence of new bone in the neighborhood of the cartilage islands, and the corresponding localized atrophy of the membranous labyrinth; conditions which would point to a relationship, in causation, of the two forms of labyrinth disorder.

Occupational Impairment of Hearing Artifically Produced.—In a continuation of his experiments, previously reported, HOESSLI (*Zeitschrift f. Ohrenheilkunde*, vol. lxix, p. 3) used his artificial boilermaker's shop, consisting of a suspended section of iron drain pipe, swinging free and struck by a succession of mechanically actuated hammers. The guinea-pigs, as in the previous experiments, were subjected in the iron pipe for a period of eight weeks, twelve hours daily, to the continuous sound of the hammer blows, both ears being open; as a part of the experiment also in some instances, the floor of the pipe, within, was covered by a carpet of felt 2 c.c. in thickness, another series of animals exposed to the noise within the pipe had one ear previously tightly stopped. By comparison of the volume of noise to which the animals were subjected with actual conditions in boiler shops, the author found this experimental noise to be much the weaker which served to explain the slowness of manifestation of the induced labyrinthine changes; the first pathological change in the cochlea was noted at the end of three weeks, but at the end of ten weeks the organ of Corti was virtually destroyed. It was, moreover, evident from these experiments that the sound transmitting apparatus of the middle ear was the medium through which the destructive disturbance found admission to the labyrinth, for the tightly stopped ears remained intact and the thick felting had no protective influence whatever. Protection for the human ear under occupational conditions in continuous loud noises can be effected only by safeguarding of the sound transmitting apparatus by firm closure of the external auditory canal.

On the Reëducation of Hearing.—In the opinion of LAIMÉ (*Ann. des Mal. de l'Oreille*, vol. xl, p. 4), auditory reëducation is one of the otological questions of the day, a question as to the possibility, in default of favorable results of treatment, of ameliorating the condition of the deaf and of controlling the advance of processes which make for a further limitation of an important special sense. The various attempts toward a favorable solution of the question have had their point of departure from a common ground, the reëducation of the defective organ of hearing by its subjection, in varying degrees, to different classes of sounds. The methods employed for auditory reëducation are divisible into two general groups, the first dealing with the audition of artificial or mechanically-produced sounds, the second availing itself wholly of the sound of the human voice and articulate language. In the first method is included a great variety of sounds of varying timbre and intensity, tuning-forks, sirens, pipes, whistles, and a variety of instruments electrically agitated for the purpose of maintaining a definite and controllable continuity of sound. One of the objections to the employment of sound sources of a mechanical kind is the prevalence of metallic overtones and the injurious effects upon the membranous labyrinth of prolonged exposure of the auditory apparatus to tones of this class as shown by Siebanmann, Hoessli, and others. The second method relies solely upon the instrumentality of the human voice, to the compass of which the human auditory apparatus is especially adjusted, a method which has found its foremost exponents in Austria and North America, some of whom couple the auditory reëducation with the visual study of the component movements of the lips and face. In extreme cases the vocal reëducation should begin with the simple vowel sounds and extend to the introduction of individual consonant checks and later to their combination in spoken words and sentences, while even in cases of a moderate, monaural, impairment of hearing the reëducation is of value as an adjuvant to others, established, forms of local treatment.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF

JOHN McCRAE, M.D., M.R.C.P.,

LECTURER ON PATHOLOGY AND CLINICAL MEDICINE, MC GILL UNIVERSITY, MONTREAL; SOME TIME PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF VERMONT, BURLINGTON, VERMONT; SENIOR ASSISTANT PHYSICIAN, ROYAL VICTORIA HOSPITAL, MONTREAL.

AND

OSKAR KLOTZ, M.D., C.M.,

PROFESSOR OF PATHOLOGY AND BACTERIOLOGY, UNIVERSITY OF PITTSBURGH, PITTSBURGH, PA.

Cellular Constants, Water.—Mayer and Schaeffer (*Jour. de Physiol et de Path. gen.*, January 15, 1914) have shown some interesting facts in connection with cellular constants, beginning with water, and its equilibrium in the tissues. The cellular constituents being colloidal complexes, appear in a protoplasm which is a gel: the lipoids are not